

# The Effect of Magnetized Water on Growth and Quality Improvement of Poultry

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This study explores the impact of magnetically treated water on the growth and quality of poultry. The research indicates significant improvements in red blood cell count, packed blood cell volume, and hemoglobin concentration in poultry that consumed magnetized water compared to a control group. Additionally, magnetized water appears to have positive effects on digestion, immunity, bone development, and egg production in chickens. This study highlights the potential benefits of using magnetized water in poultry farming. Based on present findings, it is water quality plays a vital role in poultry farming, and magnetized water has demonstrated potential benefits. Chickens consuming magnetized water exhibit improved growth, egg quality, and overall health. In conclusion, The use of magnetized water in poultry farming can have a positive impact on productivity, economic returns, and animal welfare, making it a valuable addition to modern poultry farms. Overall, the paper provides valuable insights into the potential benefits of magnetized water in poultry farming.

**Keywords:** Magnetized water, Growth, Poultry, Blood cell, Chicken.

## INTRODUCTION

Magnetized water is a type of water exposed to specific magnetic fields, which can alter its properties. This is particularly important in light of the desalination processes and environmental pollution that often deplete water of its essential properties, rendering it "dead water." Magnetizing water reorganizes its charges and enhances its conductivity, ionization, and electrical charge, ultimately reducing acidity (Esmailnezhad *et al.*, 2017).

**Benefits of Magnetized water for Animals:** Studies have demonstrated the positive effects of magnetized water on animals, such as improved digestion, absorption of nutrients, and cell growth. It has also shown to benefit blood circulation and milk production in cows and goats. This research focuses on the potential benefits of magnetized water in poultry farming, magnetized water was used for animals, specifically for cows and goats, as the result was the positive effect of magnetic water on digestion and absorption, cell growth and functions, and it also has a good effect on blood circulation. Animal milk. Some experiments and studies conducted on animals that received magnetic water showed increases in the number of red blood cells and hemoglobin (Radha *et al.*, 2023).

**The Use of Magnetized Water in Poultry Farming:** In recent years, researchers have emphasized the importance of using

magnetized water to enhance the health and productivity of farm animals, particularly chickens. Magnetized water is known by various names, including "vital water" and "healthy water," due to its potential to improve the properties and functions of water within living organisms. Several studies support the use of magnetized water in poultry farming (Kenia, 2018; Akande, 2022).

**Changes in Water Properties when Magnetized:** Magnetization of water alters its molecular structure, breaking down hydrogen bonds and forming smaller clusters of water molecules. This increases surface area, oxygen content, and the water's ability to dissolve salts while preventing grease buildup in blood vessels and pipes (Esmailnezhad *et al.*, 2017).

**Benefits of Magnetized Water in Poultry Farming:** There are many benefits of magnetized water, which are Enhanced body weight in broilers, laying hens, and mother hens due to improved nutrient absorption and metabolism. Increased egg production and prolonged productive periods, reduced stress levels in chicken flocks, potentially lowering disease incidence, Improved cardiovascular function and reduced blood viscosity, Enhanced immunity against diseases, leading to higher resistance to common poultry illnesses, Alkaline properties of magnetized water help kill harmful microorganisms, Improved hatching rates and chick health and increased resistance to heat stress in broiler chicks during

hot months. The use of magnetized water also led to an increase in the numbers of beneficial lactic bacteria *Lactobacilli* and reduced the number of coli bacteria (*E. coli*) and fungi inside the small intestine (Khirug, 2020).

**Applications in Agriculture:** Magnetized water has also demonstrated benefits in crop cultivation, including increased seed growth, efficient irrigation, enhanced fertilizer effectiveness, reduced harmful microbes in soil, and accelerated crop production with improved quality (Alattar *et al.*, 2022; Putti *et al.*, 2023).

**Comparative Studies:** Chickens that consumed magnetized water showed significant improvements in weight, meat-to-fat ratio, and egg production compared to those drinking non-magnetized water. These findings emphasize the importance of magnetized water for poultry health and production. The magnetically treated water affects the characteristics of the blood in poultry, and when the blood is exposed to the magnetic field, this results in an improvement in the properties and characteristics of the blood. And it leads to a significant decrease in the percentages of blood corpuscle hemoglobin and average percentages of corpuscular hemoglobin, although the values of corpuscular hemoglobin average and corpuscular hemoglobin average did not reach levels that represent cases of anemia because they were close to normal values, although they are not consistent with what was recorded of the presence of Direct relationship between blood characteristics such as

1- The total number of blood cells

2- Hemoglobin concentration

3- The size of the compacted blood cells (Saleh, 2005); There may be a need in subsequent studies to measure the activity of the hormone erythropoietin produced by the kidney and the hepcidin hormone produced by the liver and they have a major role in regulating the process of building red blood cells and regulating the transportation, storage and utilization of iron in Erythrocyte culture for the purpose of identifying the cause of these changes in blood parameters. Mutter *et al.* (2019) found that the magnetized water led to a significant increase in the number of red blood cells, the volume of packed blood cells, and the concentration of hemoglobin in the blood. It was also found (Muhammad and Younes, 2012) that the increase in hemoglobin in the blood and the percentage of the volume of packed blood cells and the number of red blood cells when treated with magnetized water, and this was identical to what was indicated by (Mustafa 2012), it works to revive and repair cells, and the number of blood cells increases in the bloodstream. In blood hemoglobin and the number of red blood cells compared with the control group. Also, these results agreed with what (Mustafa 2012) mentioned that magnetized water works to increase the numbers of blood cells, and this leads to supplying the cells of the body with nutrients. And the growth of cells and find nutrients in the body, and magnetically treated water increases tissue activity and increases the number of blood cells in the bloodstream

(Tech 2014). Gholizadeh *et al.* (2008) found that magnetic fields attract iron in the blood and then bring More blood to the area, and red blood cells and hemoglobin increase, which leads to more oxygen being carried to the cells, and this is consistent with what was indicated by Barrett (2002) that exposure of the body to magnetic fields increases the formation of red blood cells, and that higher Hemoglobin concentration rates in the blood in two directions. The first is related to the effect of magnetized water in the blood, which makes it more animals that took magnetized water. It can be explained by the ability to equip the body, its cells and various glands with nutrition. As for the performance of its work in its best biological conditions, which led to raising the capacity of the organs and blood-producing tissues such as the liver, spleen and marrow. Al-Azm on the production and increase of hemoglobin in the blood (Sofla *et al.*, 2020), and that the composition of the blood contains a large percentage of water. To raise its ability to dissolve oxygen, and this is reflected in the increase in hemoglobin in the blood of animals that were irrigated with magnetically treated water (Nasser 2016).

The rise in glucose concentration values may be due to the importance of magnetized water in the process of glucose formation within the chicken groups to which the magnetically treated water was provided to the body of the glycogenic organism and the regulation of its level in addition to regulating the acid-alkaline balance in the body and stimulating the processes of anaerobic metabolic decomposition and anaerobic metabolic decomposition, which leads to the result It also leads to a higher level of energy production within living cells and also works to reduce the process of protein catabolism due to the increase in sugar and protein in the blood (Mousa and Hmed 2008), and is also due to the decrease in the concentration of cholesterol in the blood serum of chickens that drank water.

The magnetic therapy increases the effectiveness and activity of the thyroid gland (Thom's, 2022), which secretes the hormone thyroxine, which is responsible for cholesterol metabolism, lowers its level in blood plasma, and increases the ability of the liver to excrete it into the bile.

Magnetized water in general is due to its importance in stimulating the movement of blood that flows in the arteries and veins, and this movement activity of the blood is accompanied by the transfer of large quantities of important nutrients for the vital muscular structure of the body represented by With amino acids, which are the cornerstone for building the protein mass of vital tissues of the body (El-Sabrou and El-Hanoun, 2019).

Hafizi *et al.* (2014) showed a significant increase in the protein level. The results were identical to what was reached by Kelly when treated with magnetized water and magnetically treated that the magnetized water led to a significant increase in the level of total protein (Hafizi *et al.*, 2014).



The results agreed with the results of (Hasnawi and Daker., 2014) as they noticed a significant decrease in the effectiveness of ALT and AST enzymes when treated with magnetized water, and that the reason for the decrease in the effectiveness of these two enzymes is the presence of an inverse relationship between the activity and activity of ALT and AST enzymes and the level of total protein in the blood serum (Al-Husseini, 2020) That the decrease in the proportion of variable cells / lymphocytes gives a good impression of the health of chickens, and that the ratio of variable cells / lymphocytes is considered the best guide to reveal the general condition of chickens and the level of stress to which they are exposed, and that the reason for this decrease in the treatment of magnetized water It is due to the fact that the magnetic intensity works to strengthen the immune system and increase the immune capacity of T and B lymphocytes and in turn works to support and strengthen the immune system and thus more resistance to diseases by increasing the number of lymphocytes as magnetized water works to renew and activate cells (magnetized water activates Movement of blood and lymph) (Luma, 2018).

Water is the secret of life and is included in the composition of tissues and cells of the human, animal and plant bodies. It is important in the body as it is involved in the processes of representation, digestion and transport of nutrients to different tissues, excretion of toxins and waste to the organs of excretion and regulation of body temperature. Water is one of the elements. The important thing is in the chicken body, and in order for it to have this important and physiological function inside the body, it must have distinct effective characteristics such as fluidity and lack of viscosity to the various organs of it) to become more flowing within the tissues of the body to reach .This mechanism is done by magnetizing the water, because the water used for drinking may be harmful water in one way or another even if it has been sterilized and filtered with alum and chlorine salts, which may lead to damage to human and animal health and thus the loss of part of its properties and this is what is called chemical On this basis, many researches have been conducted to improve the characteristics of the water (Ronald *et al.*, 2014). The hydrogen and oxygen atoms break down some hydrogen bonds, and the result is smaller assemblies of water molecules (Kim *et al.*, 2018).

The pH value increases and the amount of dissolved oxygen in water increases (Saleh *et al.*, 2005).

Many researches and studies have been conducted in the world during the last decade, proving the importance of magnetically treated water in improving public health and increasing hemoglobin capacity. in the blood in connection with oxygen molecules and reduce blood acidity (AL-Ibady, 2015), in addition to the importance of magnetized water in lowering blood pressure, treating nervous disorders, removing grease and fatty substances that cause

atherosclerosis, regulating blood circulation and treating asthma (Saleh *et al.*, 2019).

**Conclusion:** Based on present findings, it is water quality plays a vital role in poultry farming, and magnetized water has demonstrated potential benefits. Chickens consuming magnetized water exhibit improved growth, egg quality, and overall health. The use of magnetized water in poultry farming can have a positive impact on productivity, economic returns, and animal welfare, making it a valuable addition to modern poultry farms. Overall, the paper provides valuable insights into the potential benefits of magnetized water in poultry farming.

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